

AMENDMENTS TO THE CLAIMS:

This listing of the claims will replace all prior listings and versions of claims in the application:

1 –14. (cancelled).

15. (currently amended) A plurality of carriers on which a plurality of different compounds can be synthesized, comprising a population of detectably distinct carriers wherein each carrier is covalently coupled to a synthon suitable for use in combinatorial synthesis, each carrier having a code, which distinctively identifies a respective carrier before, during and after a combinatorial synthesis from other carriers, and which is characterized by at least two detectable features and/or quantifiable attributes integrally associated with the carrier, wherein individual carriers comprise all the features attributes that define a corresponding code before commencing synthesis of a respective compound thereon, and wherein the population of detectably distinct carriers constitutes at least about 70% of the plurality of carriers, wherein one of said features attributes is not shape, or surface deformation(s) of the carrier, and wherein said plurality of carriers comprises a plurality of synthons.

16. (cancelled)

17. (currently amended) The plurality of carriers of claim 15, wherein at least one of said features attributes of a respective carrier is an electromagnetic radiation-related attribute selected from the group consisting of a light emanating feature, a light absorbing feature, a radioactive feature, a magnetic feature, and a metallic feature.

18. (currently amended) The plurality of carriers of claim 17, wherein said light emanating feature is selected from the group consisting of light scattering, luminescence, phosphorescence, atomic fluorescence emission, and molecular fluorescence emission the electromagnetic radiation-related attribute is selected from the group consisting of fluorescence emission, luminescence, phosphorescence, infrared radiation,

electromagnetic scattering including light and X-ray scattering, light transmittance, light absorbance and electrical impedance.

19. (currently amended) The plurality of carriers of claim 17, wherein the wherein the feature is selected from the group consisting of a light emanating feature and a light absorbing feature, wherein said feature is detectable by illuminating the carrier with incident light of one or more selected wavelengths or of one or more selected vectors ~~electromagnetic radiation related attribute is a light emitting, light transmitting or light absorbing attribute detectable by illuminating the carrier with incident light of one or more selected wavelengths or of one or more selected vectors.~~

20. (currently amended) The plurality of carriers of claim 15, wherein a respective carrier has at least three detectable ~~and/or quantifiable~~ features ~~attributes~~ integrally associated therewith.

21. (currently amended) The plurality of carriers of claim 17, wherein the wherein the feature of a respective carrier is fluorescence and said carrier comprises a fluorescent dye ~~electromagnetic radiation related attribute of a respective carrier is fluorescence and said carrier comprises a fluorescent dye.~~

22. (previously presented) The plurality of carriers of claim 15, wherein each carrier is a colloidal particle.

23. (currently amended) The plurality of carriers of claim 15, wherein at least one of said features is incorporated into one or more microparticles ~~carriers have different shapes selected from the group consisting of spheres, cubes, rectangular prisms, pyramids, cones, ovoids, sheets or cylinders.~~

24. (previously presented) The plurality of carriers of claim 15, wherein the carriers have different forms selected from the group consisting of pellet, disc, capillary, hollow fiber, needle, pin and chip.

25. (original) The plurality of carriers of claim 15, wherein the carriers have different sizes.

26. (currently amended) The plurality of carriers of ~~claim 23~~claim 22, wherein said one or more microparticles comprises a microparticle selected from the group consisting of a colloidal microparticle and a ceramic microparticle~~the colloidal particle is a polymeric or ceramic particle.~~

27. (currently amended) The plurality of carriers of claim 26, wherein the ceramic microparticle is a silica microparticle.

28. (currently amended) The plurality of carriers of claim 26, wherein the said one or more microparticles comprises a microparticle of~~carriers comprise ceramic particles with different diameters selected from about 0.01 μm to about 50 μm in diameter to about 150 μm .~~

29. (original) The plurality of carriers of claim 15, wherein a respective carrier comprises functionalities selected from the group consisting of -NH₂, -COOH, -SOH, -SSH and sulfate.

30-62. (cancelled)

63. (currently amended) The plurality of carriers according to ~~claim 29~~claim 15, wherein one or more of said functionalities are attached to~~said synthons are coupled to said carriers by a linker.~~

64. (cancelled).

65. (new) The plurality of carriers of claim 23, wherein said one or more microparticles comprises a microparticle having a shape selected from the group consisting of a sphere, a cube, a rectangular prism, a pyramid, a cone, an ovoid, a sheet, and a cylinder.

66. (new) The plurality of carriers of claim 23, wherein said one or more microparticles comprises a microparticle attached to a carrier through colloidal interaction.